ABSTRACT

A wireless transmission apparatus that improves throughput in a wireless communication network system. In this apparatus, M_T units of transmission/reception sections (122-1 to 122-M_T) respectively correspond to M_T units of antennas (121-1 to 121-M_T) and transmit a preamble signal and a data signal via corresponding antennas (121-1 to 121-M_T). M_T units of transmission/reception sections (122-1 to 122-M_T) use subcarriers allocated per antennas (121-1 to 121-M_T) out of subcarriers (141, 142, 143 and 144) in preamble signal transmission. Furthermore, M_T units of transmission/reception section (122-1 to 122-M_T) use a subcarrier (140) having a frequency different from subcarriers (141, 142, 143 and 144) in data signal transmission.